

FEATURES

- High Output Power: $P_{1dB}=29.5dBm$ (Typ.)
- High Gain: $G_{1dB}=13.5dB$ (Typ.)
- High PAE: $\eta_{add}=47%$ (Typ.)
- Proven Reliability
- Hermetically Sealed Package



DESCRIPTION

The FLL101ME is a Power GaAs FET that is specifically designed to provide high power at L-Band frequencies with gain, linearity and efficiency superior to that of silicon devices. The performance in multitone environments for Class AB operation make them ideally suited for base station applications. This device is assembled in hermetic metal/ceramic package.

Fujitsu's stringent Quality Assurance Program assures the highest reliability and consistent performance.

ABSOLUTE MAXIMUM RATING (Ambient Temperature $T_a=25^\circ C$)

Item	Symbol	Condition	Rating	Unit
Drain-Source Voltage	V_{DS}		15	V
Gate-Source Voltage	V_{GS}		-5	V
Total Power Dissipation	P_t	$T_C = 25^\circ C$	4.16	W
Storage Temperature	T_{stg}		-65 to +175	$^\circ C$
Channel Temperature	T_{ch}		175	$^\circ C$

Fujitsu recommends the following conditions for the reliable operation of GaAs FETs:

1. The drain-source operating voltage (V_{DS}) should not exceed 10 volts.
2. The forward and reverse gate currents should not exceed 1.0 and -0.5 mA respectively with gate resistance of 400 Ω .

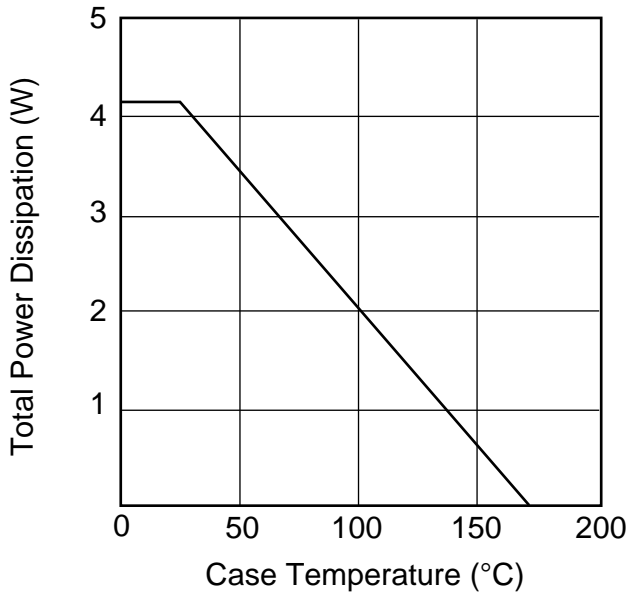
ELECTRICAL CHARACTERISTICS (Ambient Temperature $T_a=25^\circ C$)

Item	Symbol	Test Conditions	Limit			Unit
			Min.	Typ.	Max.	
Saturated Drain Current	I_{DSS}	$V_{DS} = 5V, V_{GS} = 0V$	-	300	450	mA
Transconductance	g_m	$V_{DS} = 5V, I_{DS} = 200mA$	-	150	-	mS
Pinch-off Voltage	V_p	$V_{DS} = 5V, I_{DS} = 15mA$	-1.0	-2.0	-3.5	V
Gate Source Breakdown Voltage	V_{GSO}	$I_{GS} = -15\mu A$	-5	-	-	V
Output Power at 1dB G.C.P.	P_{1dB}	$V_{DS} = 10V$ $I_{DS} \approx 0.6I_{DSS}$ (Typ.), $f = 2.3GHz$	28.5	29.5	-	dBm
Power Gain at 1dB G.C.P.	G_{1dB}		12.5	13.5	-	dB
Power-added Efficiency	η_{add}		-	47	-	%
Thermal Resistance	R_{th}	Channel to Case	-	25	36	$^\circ C/W$

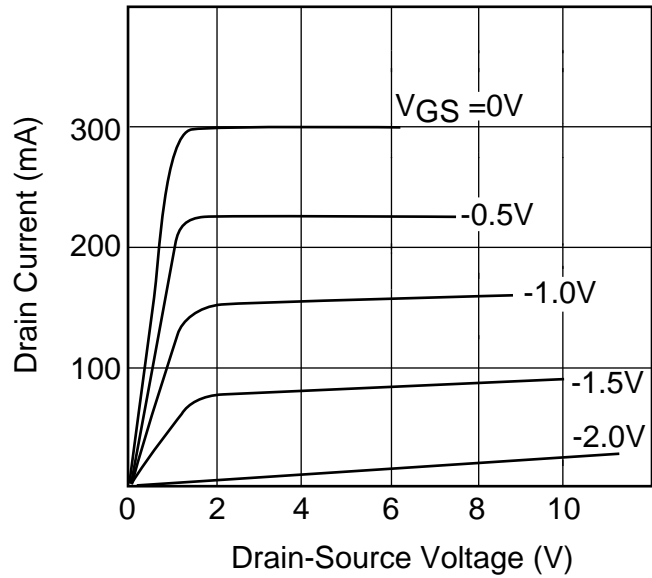
CASE STYLE: ME

G.C.P.: Gain Compression Point

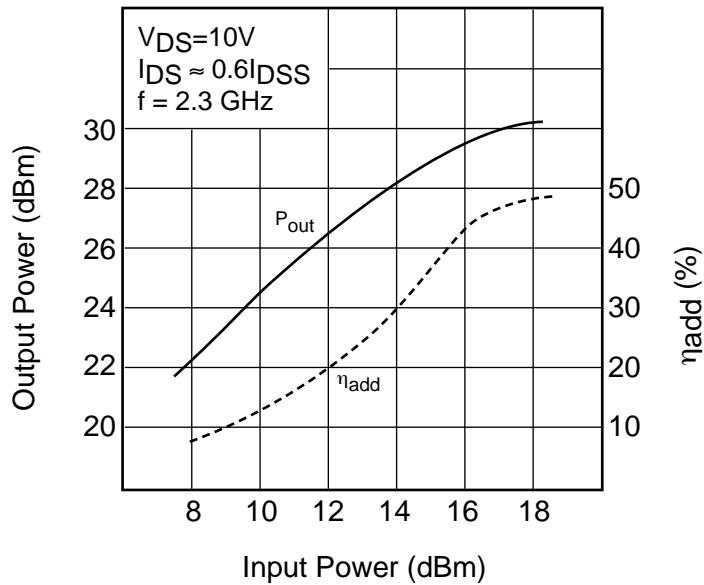
POWER DERATING CURVE

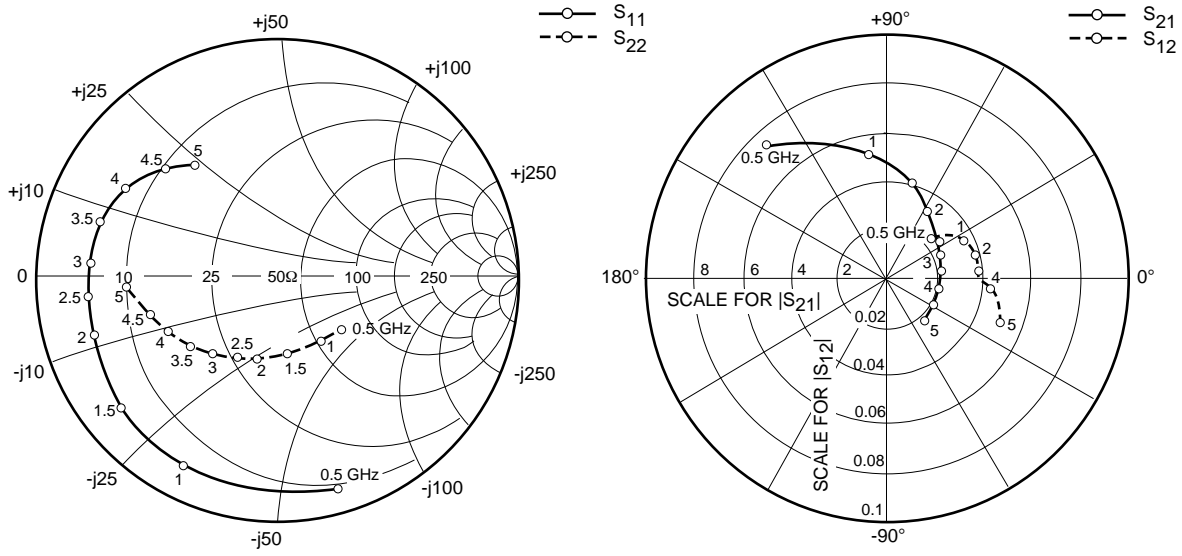


DRAIN CURRENT vs. DRAIN-SOURCE VOLTAGE



OUTPUT POWER vs. INPUT POWER





S-PARAMETERS

$V_{DS} = 10V, I_{DS} = 180mA$

FREQUENCY (MHZ)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
100	.994	-19.4	9.341	166.8	.006	68.6	.341	-12.1
500	.888	-73.2	7.335	131.4	.025	47.2	.312	-45.6
1000	.870	-117.7	5.281	98.0	.035	27.9	.307	-75.3
1500	.859	-143.6	3.984	74.4	.037	15.7	.332	-95.3
2000	.849	-161.3	3.201	55.2	.038	8.9	.370	-110.9
2500	.839	-174.4	2.724	38.5	.037	4.7	.414	-123.6
3000	.824	174.4	2.419	22.6	.037	4.0	.464	-135.0
3500	.802	163.6	2.230	6.7	.038	2.8	.513	-146.0
4000	.769	153.1	2.135	-9.2	.041	-5	.564	-156.3
4500	.717	141.7	2.127	-26.3	.044	-6.4	.620	-166.1
5000	.628	128.4	2.193	-46.0	.047	-18.6	.684	-176.1

Case Style "ME"
 Metal-Ceramic Hermetic Package

